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ABSTRACT

Concerned that most of the education reform debate of the 1980s has ignored the needs of girls, the American Association of University Women (AAUW) has launched its Initiative for Educational Equity. The first steps in this initiative were twofold. First, a survey of 3,000 fourth through tenth grade students, girls and boys from across the country, was carried out. This survey examined the impact of gender on self-esteem levels, career aspirations, educational experiences, and math-science interests. Second, a roundtable was held January 9, 1991, with leaders from education, business, government, and the media at which the findings of the AAUW survey were presented and discussed. At the roundtable, these leaders expressed their concern with the problem of gender bias in the schools and their commitment to working toward providing better educational opportunities for girls and young women. This document summarizes the findings of the AAUW survey and highlights comments by some of the roundtable participants. The research pointed out that as girls grow, they lose confidence in their abilities, expect less from life, and lose interest in challenging courses of study and rewarding careers, particularly pursuits involving mathematics and science. Schools play a critical role in limiting girls' aspirations, through various forms of gender bias, including a lower quality and quantity of classroom attention. Girls' declining self-esteem is a social problem the schools can and must play a role in solving. It is crucial that girls receive the education, support, and challenges they need to become part of the highly skilled workforce the United States needs; to reach their full potential as citizens in a democratic society; and to grow up to be parents who will challenge and nurture their own children. The pressing need for a workforce unequaled in the world combined with the continuing debate over school reform provides a unique window of opportunity for improving education for girls. A list of the roundtable's participants and the agenda are included as appendices. (DB)

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SHORTCHANGING GIRLS, SHORTCHANGING AMERICA

A CALL TO ACTION

A·A·U·W

INITIATIVE FOR EDUCATIONAL E·Q·U·I·T·Y

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SHORTCHANGING GIRLS SHORTCHANGING AMERICA

A CALL TO ACTION

A · A · U · W

INITIATIVE FOR EDUCATIONAL E · Q · U · I · T · Y

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN

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Foreword

If we want our children to thrive in the global economy of the next century, they must become the best-educated people on earth. This simple truth, which explains the growing sense of urgency that fuels the education reform movement, has inspired an outpouring of reports, studies, conferences, proposals, and experiments for improving public education.

Unfortunately, most of this debate has ignored more than half of the people whose futures are shaped by the schools: girls. Little attention has been paid to the conditions in our classrooms that prevent girls from growing into women who can make their fullest contributions to society.

What happens to girls during their school years is an unacknowledged American tragedy. Girls begin first grade with the same levels of skill and ambition as boys, but, all too often, by the time girls finish high school, their doubts have crowded out their dreams. And when they become women who aim lower and achieve less than they should, our entire society loses the contributions they might have made if only they'd been encouraged to expand their horizons.

In an effort to get girls onto America's education agenda, the American Association of University Women has launched the AAUW Initiative for Educational Equity.

We commissioned the most extensive examination ever of the comparative self-esteem levels, career aspirations, educational experiences, and math/science interests of American girls and boys. During the fall of 1990, the research firm Greenberg-Lake: The Analysis Group interviewed 3,000 girls and boys ages 9 to 15 to explore the impact of gender on their self-confidence, academic interests, and career goals.

On January 9, 1991, we put these findings before an Educational Equity Roundtable of educators, business people, public officials, and members of the media. We brought this diverse and

distinguished group together because we wanted to involve, inform, inspire, and learn from leaders from many sectors of society concerned with America's schools.

Once the problem was presented to the participants at the Roundtable, there was an impressive—and overwhelming—commitment by these leaders to address the needs of girls and young women. Speaker after speaker said that she or he would help to bring the issue to the attention of the public, to combat gender bias within their own institutions, and to work with others to seek solutions at the local, state, and national levels. In this report, we've highlighted comments by Roundtable participants. These comments were typical of what was truly a spirited and stimulating discussion about how to begin the difficult but essential work of eliminating gender bias in education.

The survey and the Roundtable are just the first steps in AAUW's effort to stimulate a national discussion on how our schools—and our entire society—can encourage girls to believe in themselves, to aim high in life, and to be their best in whatever fields of endeavor they set their sights upon, including mathematics and science.

We have awarded a grant to the Wellesley College Center for Research on Women to review the growing body of research on how girls learn. This study, funded by the AAUW Educational Foundation, will be released in early 1992.

AAUW certainly doesn't claim to have all the answers. Our goal is to challenge parents, teachers, business leaders, public officials, and opinionmakers to address the issue of how schools must help girls grow into women capable of making the most of their talents and potential.

When you read this report, we ask you, most of all, to think of some special girl in your life—a daughter or granddaughter, a sister or student, a niece or a neighbor. Ask yourself, "What can I do to make sure that our schools aren't shortchanging **her** future?"

Sharon Schuster, president, AAUW

Executive Summary

Concerned that most of the past decade's education reform debate has ignored the needs of girls, the American Association of University Women has launched its Initiative for Educational Equity.

The first steps in this initiative included:

Δ A survey of 3,000 fourth through tenth grade students, girls and boys from across the country. This survey examined the impact of gender on self-esteem levels, career aspirations, educational experiences, and math-science interests.

Δ A Roundtable, held January 9, 1991, in Washington, DC, with leaders from education, business, government, and the media, at which the findings of the AAUW survey were presented and discussed. At the Roundtable, these leaders expressed their concern with the problem of gender bias in the schools and their commitment to working toward providing better educational opportunities for girls and young women.

"Our goal is to turn research into action."

Sharon Schuster, AAUW

The Problem

America is shortchanging its girls.

Our girls aren't getting the education, support, or challenges they need

Δ to become part of the highly skilled work force America needs;

Δ to reach their full potential as citizens in our democratic society;

Δ or to grow up to be parents who will challenge and nurture their own children.

As girls grow, they lose confidence in their abilities, expect less

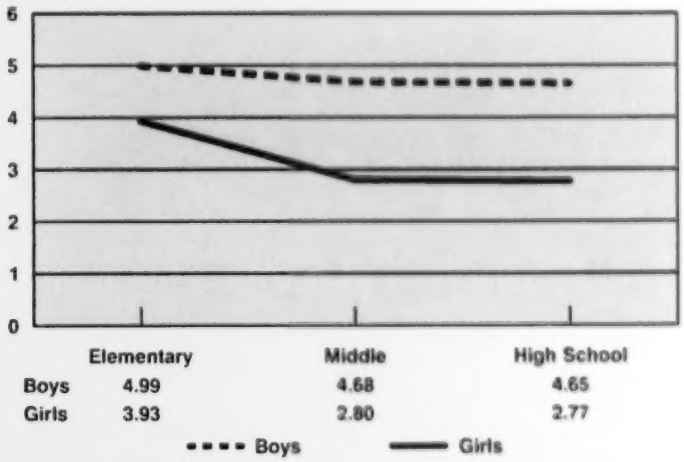
from life, and lose interest in challenging courses of study and rewarding careers, particularly pursuits involving mathematics and science.

Girls' attitudes toward themselves, their abilities, and their futures are shaped partly by family, friends, and popular culture. But the schools play a critical role in dampening girls' aspirations, systematically if unintentionally, through various forms of gender bias, including a lower quality and quantity of classroom attention.

Girls' declining self-esteem is a social problem the schools can —and must—play a major role in solving. Not only are the schools the traditional agents of education and opportunity in America, but they play a special part in instilling self-esteem and shaping interests and aspirations in young people, particularly girls.

The pressing need for a work force unequalled in the world—combined with the continuing debate over school reform—provides a unique window of opportunity for improving education for girls. For more than a century, the American Association of University Women has worked to promote equity in education for women and girls. Today, through the energy and intelligence of 135,000 members nationwide, AAUW is taking a clear stand to eliminate gender bias in the classroom.

Self-Esteem Index



THE EMERGING WORK FORCE

The increasingly competitive world economy and the demographic changes in the American work force make it a practical, as well as a moral, necessity that all our young people enjoy equal opportunities.

By the year 2000, 66 percent of the new entrants to the work force—and 47 percent of the entire work force—will be women. The economy will need many more well-educated, highly skilled workers, including at least a half million more scientists and engineers. Tomorrow's workers are in today's classrooms, and, to preserve what remains of America's competitive edge, our schools must provide our girls with the education and encouragement they need. When girls are left out and left behind in school, America competes in the world economy with only half its team on the field.

THE EDUCATION REFORM MOVEMENT

The education reform movement has gathered strength from the growing recognition that a well-schooled and highly skilled work force is essential for a prosperous economy.

Unfortunately, from the historic "A Nation at Risk" report in 1983 to the National Education Goals set by the Bush administration and the nation's governors in 1990, most of the debate over school reform has ignored the majority of our students: girls.

Amid all the reports, goals, experiments, and proposals, little attention has been paid to gender bias in the schools or to girls' educational needs and experiences, from the loss of self-esteem during adolescence to the high attrition rate in mathematics and science.

"We raise young women to be assertive, but in a nurturing way. We send one message to girls, another to boys."

Mary Hatwood Futrell, president, World Confederation of Organizations of the Teaching Profession

If there is any hope of revitalizing our schools and of providing for the future work force, girls' needs must be addressed in the education policy debate.

> *"Business is already having trouble finding qualified people to fill our jobs, especially in fields like computers and biotechnology. By early in the next century, we're going to need over 700,000 new scientists and engineers. That's ten times the number of Hispanics, twelve times the number of African Americans, and three times the number of women scientists we are currently producing. Think of the college graduating class the year 2000. Those potential engineers are in the sixth grade now."*
>
> *William Johnson, vice president, telecommunications and networks, Digital Equipment Corporation*

Gender Inequity In School

The educational system should be structured to promote all students' self-assurance, self-reliance, and self-confidence.

Unfortunately, all too often the reality in the classroom is gender bias: the thousand and one signals, consciously and unconsciously communicated, that girls and boys receive about what's expected of them. These expectations are reflected in how girls and boys are treated, how they're taught, and ultimately how they're tracked into different paths through their schooling and into their careers.

Gender bias in the classroom takes many forms, some direct and some indirect, with teachers calling on boys more often than girls, encouraging more assertive behavior in boys than in girls, evaluating boys' papers for creativity and girls' for neatness, and giving boys the time and help to solve problems on their own, but "helping" girls along by simply telling them the right answers.

Teachers who send such signals to their students usually aren't aware of what they're doing. When gender-biased behavior is

called to their attention and training in gender-fair teaching is provided, classroom behavior changes in ways that offer girls as much encouragement and feedback as boys. In short, girls start getting a better education.

Self-Esteem: The Growing Gender Gap

Much of the difference between the educational aspirations and career goals of girls and boys can be traced to a gender gap in self-esteem that widens during their school years.

Young girls are confident, assertive, and feel authoritative about themselves. But they emerge from adolescence with a poor self-image, less faith in their abilities, and diminished dreams for their futures.

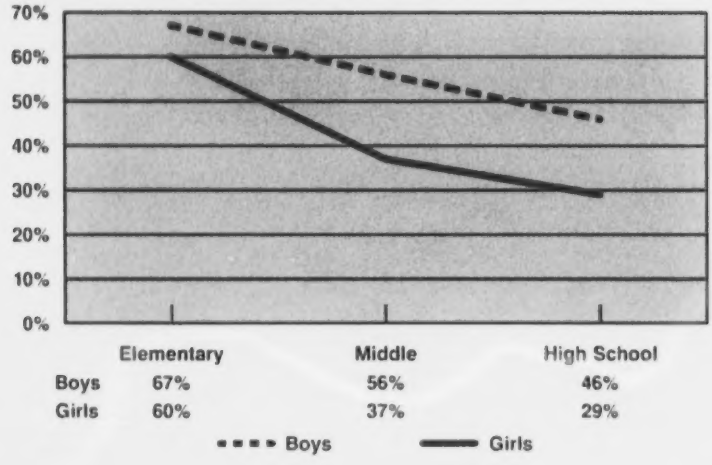
The nationwide survey commissioned by AAUW found that 60 percent of elementary school girls and 69 percent of elementary school boys say they're "happy the way I am"—a key indicator of self-esteem. By high school, girls' self-esteem falls 31 percent to 29 percent, while boys' self-esteem falls only 23 percent to 46 percent—an increase from 7 to 17 points in the gender gap on this measure of self-esteem.

Declining self-esteem creates ripple effects that put a crimp in girls' aspirations—and their actions. Low esteem leads to a lack of self-confidence. And that leads to lowered aspirations. All too often, that means young women dream less, risk less, and try less when the time comes to make crucial decisions about courses of study and choices of careers.

Self-Esteem: The Crucial Role Of Adults And Adult Institutions

The AAUW survey shows that adults and adult institutions, particularly teachers and schools, have the greatest impact on adolescents' self-esteem and aspirations. For girls and boys, pride in their performance in school and a sense of a secure place in their families do more to determine their self-images than feelings of acceptance by their peers.

I'm Happy the Way I Am
Percent "Always True" by Grade



For many girls, academic self-esteem is the most important aspect of general self-esteem. Teachers—who are mostly women—are especially influential role models for girls. And girls' feelings about their achievement in school are greatly influenced by their interactions with their teachers.

Schools and teachers should play a special part in enhancing girls' self-esteem and academic aspirations. Unfortunately, the AAUW study shows that the role teachers play is often less positive.

Mathematics, Science, And Self-Esteem

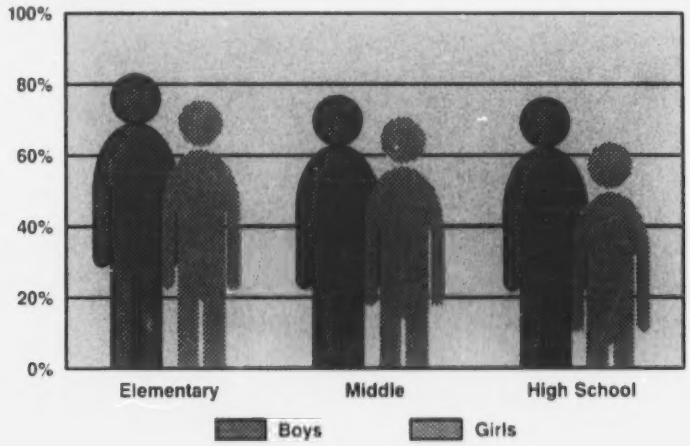
The AAUW survey found a circular relationship linking attitude toward mathematics and science, self-esteem levels, and career aspirations. Girls and boys who like mathematics and science have higher self-esteem, more ambitious career goals, and are more likely to hold onto their dreams.

The drop in self-esteem among girls coincides with a declining interest in mathematics and science. The gender differences in the intertwining of self-esteem and math/science interest is most evident in girls' and boys' reasons for their declining interest in math and science. While boys "externalize" by seeing math and

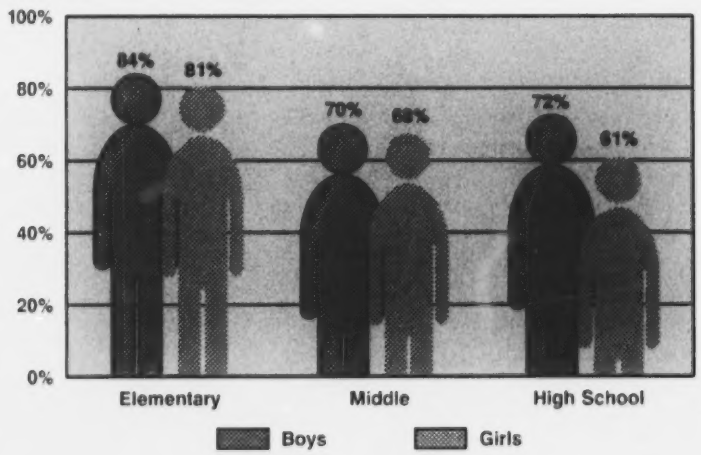
science as unimportant, girls "internalize" by thinking themselves not smart enough. Girls have "learned" the lesson society teaches: that they aren't good at math and science.

The discouragement of yet another generation of girls from pursuing courses of study in mathematics and science that lead to the jobs American industry urgently needs to fill is one more indication of how gender bias endangers not only our girls' future but our country's future as well.

Like Science
By Grade and Gender



Like Math
By Grade and Gender



When it comes to offering the encouragement all young people need—to have faith in themselves, to believe in their abilities, and to take on new challenges—we are shortchanging girls.

And when we shortchange girls, we shortchange America.

"We're dealing with a more subtle discrimination than we faced in the 1970s. But, in fact, teachers give more and better attention to boys. . .more quality and quantity of feedback, which leads to increased self-esteem. Boys are expected to be assertive; girls, silent. With one or two days of training, teachers can erase gender-biased behavior in the classroom."

Myra Sadker, professor of education, American University

Education Reform: Getting Girls Into The Goals

Never before has there been so much concern with improving American schools. And never before has there been so timely a window of opportunity for making systemic change to meet the educational needs of American girls. The education reform movement draws its sense of urgency from the growing recognition that our country's competitiveness depends upon the schooling and the skills of today's children. As the nation prepares for a new century when women will account for almost half of our work force, it's time to act on this simple—and compelling—conclusion: For America to have a first-class work force tomorrow, we must provide a first-class education for girls today.

AAUW Takes Action

In 1983, the National Commission on Excellence in Education set the tone for the education reform debate with its historic report, "A Nation at Risk." In the years that followed, study after study brought bad news about the poor performance of our students and our schools—in mathematics and science, civics and history,

literacy and language skills. Yet, as the education reform movement progressed, virtually all the studies, reports, proposals, and experiments have ignored the fact that the schools systematically if unintentionally fail more than half their students—the girls.

The American Association of University Women helped bring this issue to national attention in May 1990, after the National Governors' Association and the Bush administration jointly issued the National Education Goals. The National Coalition on Women and Girls in Education—of which AAUW is a leader—made it clear that achieving these goals depends on acknowledging systemic gender bias in schools and working to eliminate it. For instance, achieving the goal that "By the year 2000, U.S. students will be first in the world in mathematics and science" depends upon reversing the notion that "girls aren't good at math and science" by recognizing and nurturing girls' high levels of interest and ability in these subjects.

At the AAUW Educational Equity Roundtable, Colorado Governor Roy Romer, who chairs the National Education Goals Panel, declared: "I think I can speak for not only myself but all governors in saying that we know the gap in school levels. We just need to work to be sure the educational system affords everybody, no matter what gender, school opportunities. . . .And we ought to go about our work fully conscious of the barriers that some groups have, either by gender or race or ethnicity, so that we can really hit those problems head-on."

"I just need to say, 'thank you,' because I hear something that we who are very involved on a day-to-day basis in the public schools don't hear very often, and that is, 'What can we do?' not 'Why don't you do this?'
I think that most public school people would love to work with you [AAUW]."

Martha Fricke, president, National School Boards Association

Educating The New American Work Force

Improving the quality of education for girls—and for every segment of society that has been victimized by discrimination—is not only a moral imperative but a practical necessity.

This conclusion, dictated by simple logic, is reinforced by studies of the emerging American work force, including *Workforce 2000*, the influential Hudson Institute report to the United States Department of Labor. By the year 2000, only one-fifth of the new entrants to the work force will be native-born white males (who have traditionally enjoyed the best educational and employment opportunities), while four-fifths will be women, minorities, or immigrants.

The crucial part that women will play in the new work force is underscored by these facts: By the year 2000, 47 percent of the entire work force will be women, and 66 percent of the new entrants will be women.

For America to retain and enhance its competitive edge, today's girls will need to receive more encouragement, better education, and wider opportunities than previous generations of American girls have received.

This concern was voiced by business leaders attending the AAUW Educational Equity Roundtable, including Dr. Arden L. Bement, Jr., vice president for technical resources, TRW, Inc.; Dr. Mary Lowe Good, senior vice president of technology, Allied-Signal, Inc.; William Johnson, vice president of telecommunications and networks, Digital Equipment Corporation; Felicia B. Lynch, senior vice president, the Hitachi Foundation; and Jack Mawdsley, program director and coordinator of education and youth programming, the W. K. Kellogg Foundation.

These leaders who participated in the AAUW Roundtable addressed the need for girls to receive the education, encouragement, and opportunities necessary to become part of a better educated, more scientifically skilled work force to meet the challenges of the global marketplace. Nothing sums up this necessity better than these facts:

Δ The fastest growing professional fields in the country are those requiring strong educational backgrounds in math and science. Indeed, by the year 2000, the need for workers in fields requiring math and science backgrounds will have increased by 36 percent from the 1986 level, according to the National Research Council.

Δ According to a recent estimate by the National Science Foundation, by the year 2010 we will need more than 700,000 additional scientists and engineers. This means three times as many women scientists as we are currently producing.

Δ Women currently account for a relatively small percentage of those with degrees in mathematics and science, as the following statistics reveal. The continuing, and increasing, barriers to women in these fields show up dramatically in the declining percentages of advanced degrees earned by women.

PERCENTAGES OF DEGREES EARNED BY WOMEN IN 1986-87

	B.A.	M.A.	Ph.D.
Computer Science	32.4	27	11.2
Engineering	14.02	13	7
Mathematics	46.4	39.1	17.4
Physical Science	28.4	25	17.2

Source: Institute for Women's Policy Research

In the global economy of the twenty-first century, America will no longer be able to compete with one hand tied behind its back. Clearly, the competitiveness of tomorrow's America will be determined by the ambitions, abilities, and achievements of the girls sitting in today's classrooms.

These moral and practical concerns underlie the AAUW Initiative for Educational Equity. And they were voiced repeatedly by participants in the AAUW Educational Equity Roundtable —leading educators, opinionmakers, corporate executives, and public officials.

"We need to take all the talent we have in this nation and develop it to the fullest. AAUW has presented research that shows that there is a strong influence of expectations that affect girls and women in the course of their education. I think it is important that we share this information with everyone in the education system."

Colorado Governor Roy Romer, chair,
National Education Goals Panel

Ensuring America's Future: Eradicating Gender Inequity In The Classroom

While America's future is being determined in our classrooms, a growing body of research suggests that girls are being left out and left behind in school.

These studies confirm the persistence of gender bias in the schools: the thousand and one signals that girls and boys receive about what's expected of them. These expectations are reflected in how girls and boys are treated, how they're taught, and ultimately how they're tracked onto different paths through their schooling and into their careers.

Gender bias in the classroom takes many forms, conscious and unconscious, wrongheaded and well-meaning. Girls receive less attention, less effective feedback, and less detailed instruction from teachers than do boys. For example, education research by Dr. Carol Gilligan, Dr. Myra Sadker, and others reveals:

Δ Teachers initiate more communication with boys than with girls in the classroom, strengthening boys' sense of importance.

Δ Teachers ask boys more complex, abstract, and open-ended questions, providing better opportunities for active learning.

Δ In class projects and assignments, teachers are more likely to give detailed instructions to boys, and more likely to take over and finish the task for girls, depriving them of active learning.

> *"Girls are very good observers of the world around them. They're clear about their own feelings. As eight-year-olds they're outspoken and disagree publicly, but as they come to adolescence the questions they begin asking are considered disruptive and get them into trouble, and they retreat. The commonly heard phrase 'I don't know' starts at seventh grade—but the fact is they do know."*
>
> *Carol Gilligan, Harvard University School of Education*

Δ Boys are praised more often than girls for the intellectual content and quality of their work, while girls are praised more often for neatness and form.

Δ When teachers criticize boys, they often tell them that their failings are due to lack of effort. Girls are not given this message, suggesting that effort would not improve their results.

A leading authority on gender bias in the schools, Dr. Myra Sadker, professor of education at American University, told the AAUW Educational Equity Roundtable participants: "Teachers give more attention to male students. Not only do they give more attention, but they give better attention. They give them more academic praise. They also give them more academic criticism and remediation."

Dr. Sadker stressed that this gender bias is usually unconscious, and that teachers want to be fair to girls and boys in their classrooms. When teachers see videotapes of what happens in their classrooms, she explained, they are frequently shocked and express their desire to change their teaching methods to provide more encouragement to girls.

Echoes of what happens in classrooms could be heard in the in-depth interviews with adolescent girls and boys that were part of the AAUW survey. Asked whether girls speak up in class as much as boys, one girl said: "I yell out. What happens is my teacher never notices and then she just picks another person."

"Adolescence is hard for all children, but girls drop much more in self-esteem than boys do. Why is this happening? We don't know why girls stop liking the way they are or thinking they're good at a lot of things. What we do know is that there is a correlation between self-esteem and liking math and science. Girls, in huge numbers, are being lost to the science professions."

Celinda Lake, Greenberg-Lake: The Analysis Group

All too often, gender bias in the schools amounts to tracking girls away from courses of study that lead to high-skilled, high-paying, high-technology careers and into less respected and rewarding jobs.

For too many girls, low self-esteem and low aspirations lead to a cycle of poverty—teenage pregnancy, limited job opportunities, and children growing up without hope.

Whether the ultimate cost is unused talent—or even a life of dependency—the price is too high. The best way to assure that American women fulfill their potential in the next century is for every educator to provide equity and excellence in education for American girls in this decade.

> *"I see a number of social paradigm shifts both in industry and education. For example, in industry we see the focus moving from physical capital to human resources. In other words, no throwaways. The AAUW Roundtable tells us we must not waste the potential of women and girls."*
>
> *Arden Bement, Jr., vice president, technical resources, TRW, Inc.*

How the schools can better serve the needs of girls was the subject of spirited discussion throughout the AAUW Educational Equity Roundtable.

Several participants, including Marilyn Monahan, secretary-treasurer of the National Education Association, and Gene Wilhoit, executive director of the National Association of State Boards of Education, discussed whether girls—and, possibly, boys, as well—would benefit from a more cooperative learning style in the classroom, in which students work together as teams to solve problems and complete projects.

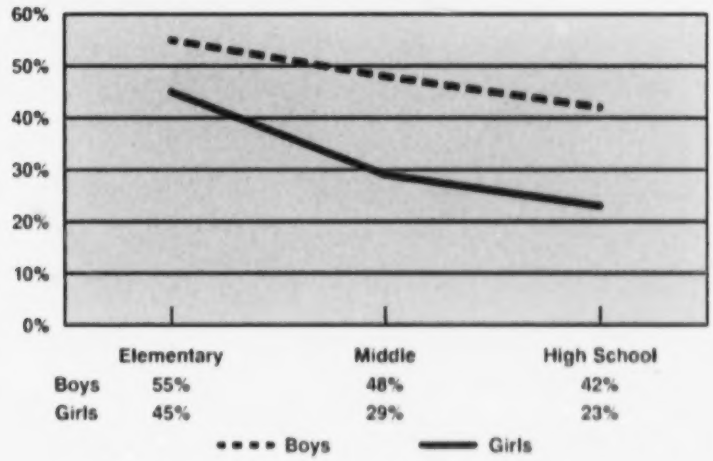
Wilhoit contrasted experiments in team-oriented collaborative learning with the more traditional style of "the teacher standing in the front of the classroom, lecturing—a passive mode on the part of the students, and less of the active kind of environment that you've

been talking about in these experiments." Mary Lowe Good, senior vice president of technology for Allied-Signal, Inc., and chair of the National Science Board, said that, while cooperative learning can "get children to learn more," they also need to learn how to compete as individuals in the free enterprise economy.

The Key To Success: Enhancing Girls' Self-Esteem And Academic Aspirations

America's future largely depends upon the decisions girls make about their lives, their educations, and their careers. And these decisions depend largely upon girls' self-esteem—their faith in themselves, their belief in their abilities, and their confidence in their capacities to live their dreams and determine their own futures.

I'm Good at a Lot of Things
Percent "Always True" by Grade



Self-esteem shapes a person's ambitions and actions. And low self-esteem shrinks a person's future.

Low self-esteem leads to a lack of self-confidence, which, in turn, leads to lowered aspirations. And that makes someone aim lower and achieve less in school, in the workplace, and throughout her life.

The AAUW survey underscores this tragic fact: As girls grow up, they lose confidence in their abilities, expect less from life, and lose interest in challenging courses of study and rewarding careers, particularly pursuits involving mathematics and science.

Young girls are confident, assertive, and feel authoritative about themselves. But they emerge from adolescence with a poor self-image, constrained views of their future, and a lack of confidence in their abilities.

> *"I suspect that teachers would say, 'Well it [gender bias] might happen in other classrooms, but certainly not in mine,' unless it's pointed out. I think the most exciting part about the research [on gender bias in the classroom] is that, when it is pointed out, teachers don't then question it and say, 'You're absolutely wrong.' They are willing then to try to change the behavior. And I think that's really powerful in terms of changes that we can see occurring."*
>
> *Marilyn Monahan, secretary-treasurer, National Education Association*

Self-Esteem: The Gender Gap

In a crucial measure of self-esteem, 60 percent of elementary school girls and 69 percent of elementary school boys say they are "happy the way I am." But, by high school, girls' self-esteem falls 31 points to only 29 percent, while boys' self-esteem falls only 23 points to 46 percent. Thus, by high school, the gender gap on this measure of self-esteem has increased from 7 to 17 points.

Indeed, a self-esteem index based on 5 measures of self-esteem shows a drop in self-esteem for girls that is more than 3 times as large as the drop in self-esteem for boys.

> *"I'd like to suggest a follow-up program that would feature role models of women who have excelled in science and math and would convey some of the values that motivate them."*
>
> *Claudine Schneider, former U.S. representative, Rhode Island*

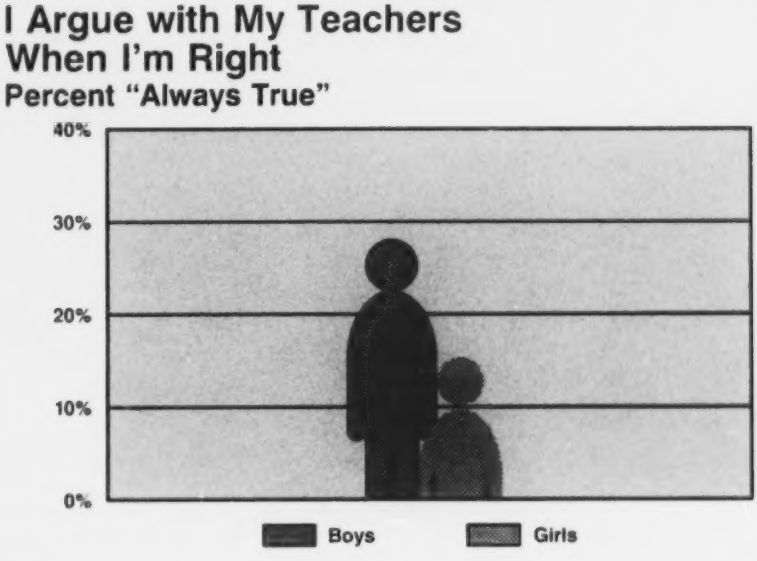
Self-Esteem: Critical Points In Girls' Lives

The AAUW survey also bolsters research that suggests that the loss in self-esteem takes place at a critical point in girls' lives: near the beginning of adolescence.

Enthusiastic and assertive at 8 and 9, girls begin to lose confidence in their abilities around 11 and 12, which can lead to measurably lowered sights. Around the early teen years, girls begin to lose confidence in their ability to succeed and succumb to negative attitudes that affect their self-esteem and aspirations for the future.

The author of influential books and articles about adolescent girls, Dr. Carol Gilligan, professor of education at Harvard, told the AAUW Educational Equity Roundtable participants: "We also found this drop in self-esteem right at the age that girls move from elementary school to middle school. Girls came up against an impasse."

Dr. Gilligan said girls at that age hit a "moment of resistance" when they reach unpleasant understandings about society, including the unfair treatment of women. "As girls approached adolescence, it became difficult for them to stay in touch with their own knowledge because a lot of people didn't want to hear what it was they were saying. The questions they were asking in the



classroom about human experience were deeply disruptive of the curriculum."

The eventual consequence for many girls, Dr. Gilligan warned, is the silencing of their own voices and a loss of assertiveness and self-confidence.

Self-Esteem: The Impact On Ambitions And Actions

Celinda Lake, who directed the AAUW survey, told the AAUW Educational Equity Roundtable group: "Even more important than the overall sense of self-esteem in terms of kids and their futures is that point where self-esteem turns to action.

"Again, we see that girls and boys start out on an equal footing in elementary school, but girls' self-esteem declines much more significantly. Girls end up much less confident about their abilities, much less likely to value themselves for their talents, much less likely to think they are good at things and can get things done," Lake concluded.

Among the AAUW survey's other alarming findings:

Δ Girls are less likely than boys to feel "pretty good at a lot of things." Less than a third of girls express this confidence, compared to almost half the boys. A 10-point gender gap in confidence in their abilities increases to 19 points in high school.

Δ Lower self-esteem among girls is a sign of less confidence in their own talents. Approximately half as many girls as boys refer to their talents as what they like most about themselves. Girls are nearly twice as likely as boys to mention a physical characteristic—appearance, hair, or clothes—as the thing they like most about themselves, reflecting society's messages that these are the things for which women are valued.

Δ Girls are less likely than boys to believe their career dreams will come true. Girls are more likely to say they are not smart enough or good enough for their dream careers.

Self-Esteem: The Impact Of Race And Ethnicity

The AAUW survey found important interactions among gender, race and ethnicity, and trends in self-esteem:

Δ African American girls in elementary school express high levels of self-esteem and retain this confidence through high school. Sixty-five percent of black girls in elementary schools and 58 percent in high school say they are "happy the way I am."

Unfortunately, the schools do not provide the same supports for academic self-esteem that families and communities provide for personal self-esteem. Dr. Janie Victoria Ward, a Rockefeller fellow at the University of Pennsylvania, assistant professor at Simmons College, and a leading authority on African American girls, told the AAUW Educational Equity Roundtable: "Black girls seem to be maintaining high levels of self-esteem by disassociating themselves from school. And obviously the decline in academic pride has serious implications for academic achievement. It can engender disinterest in school and lead to poor academic performance."

> *"There is high self-esteem among black girls because black culture emphasizes independence and assertiveness. But academic self-esteem is low. There's a decline in academic pride. Black girls are not relying on schools to give them a positive image of themselves."*
>
> *Janie Victoria Ward, Simmons College*

Hispanic girls, much less confident and positive than black girls, go through a self-perception crisis in some ways even more dramatic than that experienced by white girls. They end up with slightly higher self-esteem levels than white girls, but plummet in terms of confidence in family relationships, school, talents, and importance. The number of Hispanic girls who strongly agree with the statement "I am happy the way I am" drops 38 points, from 68 percent in elementary school to 30 percent in high school.

"There is a shortage of minority teachers to serve as role models for Hispanic girls. We must get the message across to these girls that education is important."

Elvira Valenzuela Crocker, Mexican Women's National Association

Empowering Girls For A Change: The Crucial Role Of Adults And Adult Institutions

While girls' declining self-esteem has many causes, it is a social problem the schools can—and must—play a major role in solving. Not only are the schools the traditional agents of education and opportunity in America, but they play a special part in instilling self-esteem and shaping interests and aspirations in young people, particularly girls.

Despite popular beliefs that peer groups and peer pressure dominate the actions, values, and goals of teenagers, the AAUW survey shows that adult institutions, including the school and the family, actually have a greater impact on adolescents, especially girls.

"We must demand change, but it takes time."

Ray Shifflet, associate executive director, National Academy of Sciences

Many young people—and once again, girls in particular—lose their sense of academic self-esteem as they grow. In elementary school, about half the students always feel "proud of the work I do." By high school, only 1 in 6 students feels that way.

For girls, feelings about academic performance correlate strongly with relationships with teachers, who are predominantly women. Indeed, as Dr. Gilligan emphasized, female teachers can be role models for girls who watch carefully not only how these teachers relate to male and female students but also how they interact with male and female colleagues.

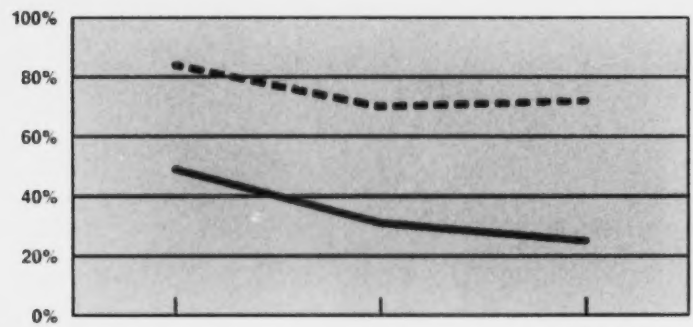
Unfortunately, even as early as elementary school, academic self-esteem is already a trouble spot for many girls. Less than half the girls in elementary school said they feel pride in their schoolwork—and that percentage drops 32 points, to only 12 percent for girls in high school.

On the other hand, for boys, confidence in their abilities contributes heavily to their self-esteem. As they perceive adults believing they can accomplish things, boys end up with higher self-esteem as they go through adolescence. But, for girls, perceptions that adults, including teachers, have less faith in girls' abilities results in declining self-esteem.

Summing up the link among what schools expect from young people, how young people feel about themselves, and what they eventually achieve, Dr. Frank Newman, president of the Education Commission of the States, said: "What we expect is what we get. It's no news to some educators, but it's coming home to roost."

Boys and Math

Like Math vs. Good at Math

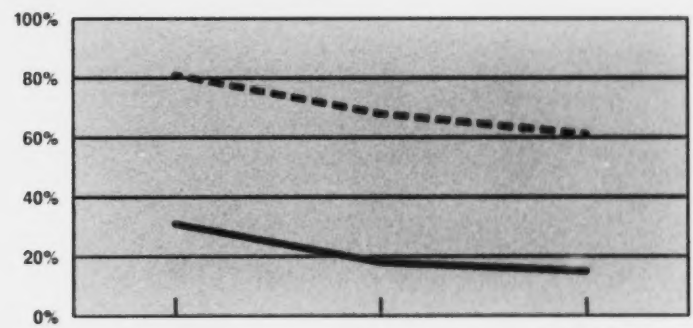


	Elementary	Middle	High School
Like Math	84%	70%	72%
Good at Math	49%	31%	25%

Like Math — Good at Math

Girls and Math

Like Math vs. Good at Math



	Elementary	Middle	High School
Like Math	81%	68%	61%
Good at Math	31%	18%	15%

Like Math — Good at Math

Mathematics, Science, And The Future

Nowhere are the links among expectation, encouragement, and accomplishment clearer than in how girls and boys relate to the areas of academic endeavor where their achievements are most critical to America's future: mathematics and science.

The AAUW survey found a crucial—and circular—relationship among self-esteem levels, interest in mathematics and science, and career aspirations:

Δ Girls and boys who like mathematics and science have higher levels of self-esteem. And girls and boys with higher levels of self-esteem like math and science.

Δ Girls and boys who like math and science are more likely to aspire to careers in occupations where these subjects are essential.

Δ Girls and boys who like math and science are more likely to aspire to careers as professionals. Indeed, this relationship is stronger for girls than for boys.

Δ Girls who like math are more confident about their appearance and worry less about others liking them.

Δ Girls and boys who like math and science hold onto their career dreams more stubbornly. They are less likely to believe that they will be something different from what they want to be.

Mathematics And Science: The Gender Gap

A large majority of boys and girls like mathematics and science, but their interest declines as they get older. The largest losses are among girls. Girls and boys tend to dislike mathematics when they get bad grades. Once again, the gender gap in self-esteem is a factor: Girls perceive low grades as a personal failure, while boys come to believe that math is not useful.

An overwhelming number of boys and girls, the AAUW survey shows, start out liking mathematics and science. Most also have

confidence in their abilities in mathematics, especially in the early grades:

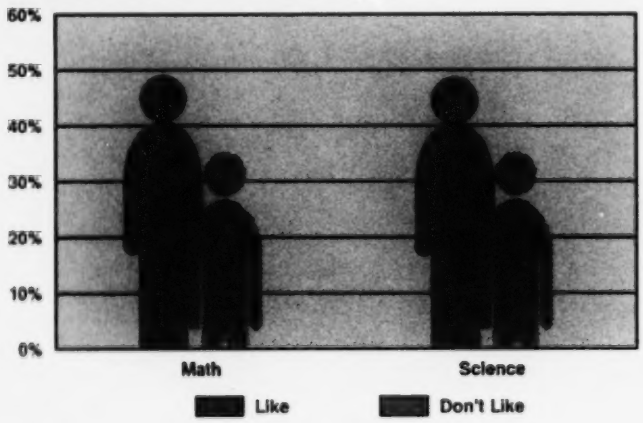
Δ Eighty-one percent of girls and 84 percent of boys in elementary school like mathematics

Δ Seventy-five percent of girls and 82 percent of boys in elementary school like science.

All students' enthusiasm for mathematics declines as they get older, but the loss of interest among girls is significantly greater. The percentage of girls who like mathematics drops 20 points to 61 percent by high school. The number for boys drops 12 points to 72 percent. And the gap between girls and boys who like mathematics increases 3 points to 11 points.

Boys and girls treat their problems with mathematics differently. Girls "internalize" their problems as personal failures. Boys "externalize" their problems by characterizing the subject as unimportant. As girls get older, the percentage who dislike mathematics because it is "too hard" drops and the percentage who dislike mathematics because they get "bad grades" increases. As boys get older, they come to believe that they do not like mathematics because the subject itself is "not useful."

Math/Science and Self-Esteem
"Happy the Way I Am"



Call To Action

In commissioning the survey, conducting the AAUW Educational Equity Roundtable, and releasing these findings, the American Association of University Women seeks to spur a national discussion that is urgently needed and long overdue. That discussion must lead to long-term solutions.

It's time to commit ourselves to a school system—and a society—that *encourages* girls to attain their full potential.

We in AAUW will continue to do our part to promote this timely and essential debate.

We will be holding Educational Equity Roundtables at the state and local levels to bring this information—and this challenge—to people all across this country. And we will be raising gender equity issues in public policy debates.

The AAUW Educational Foundation has commissioned a major study to gather and synthesize *for the first time* all the available research on gender equity and education. The Foundation's Eleanor Roosevelt Fund for Women and Girls has also awarded, for the current academic year, 22 Teacher Fellowships for K-12 public school teachers who will focus on improving the teaching of math and science to girls and on the teaching of girls at risk.

But AAUW cannot do it alone. Our work will be a catalyst for the changes that are needed in our educational system, and in every other institution that influences the aspirations and achievements of our girls and young women.

The challenge is clear for all of us—parents and educators as well as leaders in business, government, and the media. Now is the time to think, to speak out, and to take action to help American girls be the best they can be.

As this national discussion begins, two conclusions are inescapable and unquestionable:

- We *are* shortchanging our girls
- ...and when we shortchange girls, we shortchange America.

Appendix I.

AAUW Educational Equity Roundtable Participants

Policymakers

Lindsey Johnson, director, Office of Women's Business Ownership, U.S. Small Business Administration

Honorable Nita Lowey, U.S. House of Representatives

Honorable Roy Romer, governor, Colorado

Honorable Claudine Schneider, former member, U.S. House of Representatives

Corporate Sector

Arden Bement, Jr., vice president, Technical Resources, TRW, Inc.

Mary Lowe Good, senior vice president of technology, Allied-Signal, Inc., and chair, National Science Board

William Johnson, vice president, Telecommunications and Networks, Digital Equipment Corporation

Felicia B. Lynch, senior vice president, the Hitachi Foundation

Jack Mawdsley, program director and coordinator of education and youth programming, W.K. Kellogg Foundation

Media

Kathryn Bushkin, director of editorial administration, *U.S. News and World Report*

Melissa Ludtke, correspondent, *Time* magazine

Judy Mann, columnist, *The Washington Post*

Education

Robert W. Brown, director, Educational Affairs Division, NASA

Timothy J. Dyer, executive director, National Association of Secondary School Principals

Martha Fricke, president, National School Boards Association

Mary Hatwood Futrell, president, World Confederation of Organizations of the Teaching Profession

Carol Gilligan, professor, Harvard University Graduate School of Education

Sam Husk, executive director, Council of the Great City Schools

David Imig, executive director, American Association of Colleges for Teacher Education

Margaret A. McKenna, president, Lesley College

Richard D. Miller, executive director, American Association of School Administrators

Marilyn Monahan, secretary-treasurer, National Education Association

Frank Newman, president, Education Commission of the States

Kitty O'Callaghan, president, Canadian Teachers' Federation

Myra Sadker, professor and researcher, American University

Ray Shiflett, associate executive director, Mathematical Sciences Education Board of the National Research Council, National Academy of Sciences

Joseph V. Stewart, program director for teacher enhancement, Directorate for Education and Human Resources, National Science Foundation

Gene Wilhoit, executive director, National Association of State Boards of Education

Education/Community Activists

Anne L. Bryant, executive director, American Association of University Women, AAUW Educational Foundation, and AAUW Legal Advocacy Fund

Peggy Charren, founder, Action for Children's Television

Elvira Valenzuela Crocker, Mexican American Women's National Association

Ruth Hewett, educational area representative, American Association of University Women, member of Oregon State Board of Education

Gretchen Ilgenfritz, president, AAUW Legal Advocacy Fund

Dagmar E. McGill, associate national executive director, Big Brothers/Big Sisters of America, AAUW Educational Foundation Board member

Alice McKee, president, AAUW Educational Foundation

Joann J. Paden, program vice president, American Association of University Women

Glendora McIlwain Putnam, national president, YWCA-USA

Sharon Schuster, president, American Association of University Women, and chair of the board, AAUW Educational Foundation

Mildred Kiefer Wurf, Washington representative, Girls Incorporated

Arlene Zielke, vice president for legislative activity, National PTA

Model Projects

Dorotha Hogue, Colorado teacher, model program for keeping pregnant teens in school, AAUW Eleanor Roosevelt Teacher Fellow

Gloria Sanders McCutcheon, South Carolina teacher, AAUW model mentor program for enriching girls' skill in math and science

Researchers

Susan Bailey, director, Wellesley College Center for Research on Women

Nancy Goldberger, faculty member, the Fielding Institute

Celinda Lake, vice president, Greenberg-Lake: The Analysis Group, Inc.

Janie Victoria Ward, Rockefeller fellow, Center for the Study of Black Literature and Culture, University of Pennsylvania, and assistant professor, Simmons College

Appendix II.

American Association of University Women
Educational Equity Roundtable
January 9, 1991
Washington, DC

Agenda

MORNING ROUNDTABLE SESSION

11:00 **Welcome**
Why an Educational Equity Roundtable?
Sharon Schuster, President, AAUW

11:05 **Review of Agenda by Roundtable Moderators**
Margaret A. McKenna, President, Lesley College
Dr. Frank Newman, President, Educational Commission of the States

11:15 **Group Introductions**

11:25 **Shortchanging Girls: What Is at Stake for America**
Anne L. Bryant, Executive Director, AAUW

11:30 **Video Presentation**
"Shortchanging Girls, Shortchanging America"

11:40 **National Education Goals and Girls**
Colorado Governor Roy Romer, Chair, National Education Goals Panel

11:50 **Group Discussion**
Reactions to video and discussion of Governor Romer's remarks

12:10 **Review of AAUW National Poll**
Celinda Lake, Greenberg-Lake: The Analysis Group, Inc.
Dr. Janie Victoria Ward, Simmons College
Dr. Nancy Goldberger, the Fielding Institute

12:25 **Group Discussion and Reactions to Poll**

1:00-2:00 **Luncheon/Small Discussion Groups**

Questions discussed:

What in the national poll results and video most caught your attention?

What are the critical issues to address?

What more do you need to know about these issues?

What can you and your organization do to address these issues?

AFTERNOON ROUNDTABLE SESSION

2:20 **Eleanor Roosevelt Fund for Women and Girls: Intergenerational Partnerships**
Alice McKee, President, AAUW Educational Foundation

2:25 **Learning, Partnerships, and Self-Esteem**
Dr. Carol Gilligan, Professor, Harvard University Graduate School of Education

2:35 **Discussion and Reactions**

2:55 **Identifying Gender Bias in the Classroom of the 1990s**
Dr. Myra Sadker, Professor, American University

3:05 **Group Discussion and Reactions**

3:25 **Action Strategies/Partnerships: Getting Girls onto the Education Agenda**
Sharon Schuster, President, AAUW, and Roundtable Participants

4:00 **Meeting Adjourns**

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN

INITIATIVE FOR EDUCATIONAL EQUITY

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FULL DATA REPORT: SHORTCHANGING GIRLS, SHORTCHANGING AMERICA
500-page research report on AAUW's nationwide poll on girls and self-esteem, complete with survey questions and responses, and banners displaying cross-tabulations. Floppy disk with all data is included. To order, please call 202/785-7761. ***Nonmembers who purchase the full report can become AAUW members for only $10 more.***
$60 AAUW members/$85 nonmembers

SUMMARY: SHORTCHANGING GIRLS, SHORTCHANGING AMERICA
17-page summary report of AAUW's national poll highlighting the survey results, with charts and graphs.
$5 (includes shipping and handling)

A CALL TO ACTION: SHORTCHANGING GIRLS, SHORTCHANGING AMERICA
40-page book, reporting on AAUW poll and Educational Equity Roundtable, with action ideas for community involvement and change.
$12.95 AAUW members/$14.95 nonmembers

VIDEO: SHORTCHANGING GIRLS, SHORTCHANGING AMERICA
15-minute videotape (VHS format) that clearly underscores the need for major changes in the ways girls are taught and treated in schools. Includes AAUW poll results, interviews with education experts, narratives by public policy leaders, along with compelling voices and faces of American girls.
$19.95 AAUW members/$24.95 nonmembers

BRIEFS
Package of three AAUW issue briefs that provide an overview of today's most critical education issues, along with strategies for action. Ideal for distributing to community leaders and educators.
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AAUW OUTLOOK
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